DETAILED ACTION

Status of the Claims

1. Applicant's arguments and amendment filed January 10, 2012 are acknowledged and have been fully considered.
2. Claims 1-4, 7-16, 18-28, 33, and 36-49 are pending.
3. Claims 20-22 and 38-48 are withdrawn.
4. Claims 5, 17, 29-32, and 34-35 are canceled.
5. Claims 1 is amended.
6. Claims 1-4, 7-16, 18, 19, 23-28, 33, 36-37, and 49 have been examined on the merits.

Withdrawn Rejections

1. The rejection of Claim 1 under 35 USC 112 is withdrawn in light of Applicant's amendment of the claim.

2. The rejection of Claims 1-4, 7-16, 18, 19, 23-28, 33, 36, 37, and 49 under 35 U.S.C. 103(a) over Richter in view of Morelli and Kolar and Lindgren is withdrawn in light of Applicant's persuasive argument.

Maintained/Modified Rejections

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

> be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

   1. Determining the scope and contents of the prior art.
   2. Ascertaining the differences between the prior art and the claims at issue.
   3. Resolving the level of ordinary skill in the pertinent art.
   4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. The rejection of Claims 1-4, 7-16, 18, 19, 23-28, 33, 36, 37, and 49 under 35 U.S.C. 103(a) as being unpatentable over Roozdar (US 5380518, 6/10/1995) in view of Morelli et al. (US 6524624, 2/25/2003,filing date 5/16/2001) is maintained.

Regarding Claim 1, Roozdar teaches an aqueous acidic disinfecting system comprising an alkaline aqueous chlorite and a biologically compatible acid (column 9, lines 50-68; column 10, lines 1-41). The biologically compatible acid is taught to be a salt of sulfamic acid (column 9, lines 9-12). Roozdar teaches that for applications to metal where corrosion is a concern, it is useful to generate chlorine dioxide in the composition (column 1, lines 21-30). However, the generation of chlorine dioxide is not integral to the invention of Roozdar because (1) it is taught as a related but separate embodiment from the disinfecting solution itself (column 1, lines 21-30) and (2) the addition of the disproportionation agent that generates the chlorine dioxide is taught to be optional (column 10, lines 7-11). Without the addition of this agent, the production of chlorine dioxide is inhibited (column 10, line 40). Roozdar does not teach the inclusion of an oxidizable colorant. Roozdar teaches that the overall pH range is from >2.0 to about 5.0, preferably from about 2.0 to about 4.5 (column 6, lines 33-35).

Morelli et al. teach that it is useful to use an oxidizable colorant in a two-part aqueous acid disinfecting system (column 1, lines 50-53; column 2, line 23) and that such an oxidizable colorant is degraded by chlorine dioxide generated in the disinfectant (column 3, lines 40-43). Morelli et al. also teach that chlorine dioxide is a gas that escapes into the air from the disinfectant solution (column 3, lines 45-50). The oxidizable colorant of Morelli et al. is soluble in an aqueous solution (Examples 6 and 7).

It would have therefore been obvious to one of ordinary skill in the art at the time of invention to include an oxidizable colorant as taught by Morelli et al. in a composition of Roozdar that is not intended for use on metallic surfaces and therefore does not require chlorine dioxide. One of ordinary skill in the art at the time of invention would have been motivated to exclude the disproportionation agent from the composition of Roozdar to decrease the formation of chloride dioxide and thereby prevent the degradation of the colorant. Furthermore, one of ordinary skill in the art at the time of invention would have been motivated to first combine the chlorite solution and sulfamic acid solution of Roozdar, i.e., generate the disinfecting composition of Roozdar, and then let this mixture sit to allow the formed chloride dioxide gas to evaporate prior to the addition of the oxidizable colorant solution of Morelli et al., thereby reducing the amount of chloride dioxide present and inhibiting the degradation of the colorant. Therefore, this composition contains two parts: (1) the premixed solution containing chlorite and a salt of sulfamic acid (e.g., the “chlorite part” and “acid part” of the composition in Example 1 of Roozdar) and (2) the solution containing the colorant (e.g., "Part 2" in Example 1 of Morelli et al.). The composition does not contain nonoxidizable colorants.

Because Roozdar teaches that the disinfecting composition should have a pH of less than 5, it would have been obvious to one of ordinary skill in the art at the time of invention to include an aqueous acid in the solution containing the colorant to maintain the acidic pH of the final composition obtained when the premixed acid disinfectant is diluted with the solution containing the colorant; if no acid was present in the solution containing the colorant, the pH would increase when the solution containing the colorant is added to the solution containing chlorite and a salt of sulfamic acid because the acid would be diluted. The colorant-containing solution of Morelli et al., which one of ordinary skill in the art would have combined with the "chlorite part" and the "acid part" of the disinfecting solution of Roozdar, already contains an aqueous acid (“Part 2” in Example 1 of Morelli et al.).

Regarding Claims 2-4, sulfamic acid has a Reduced Chlorite Demand Factor of 4.5 as demonstrated by applicant in the instant specification (Table 10); thus, a Reduced Chorite Demand Factor of 4 or greater is a necessary property of sulfamic acid. A salt of sulfamic acid would be reasonably expected to have the same Reduced Chlorite Demand Factor because the amine group of the sulfamic acid, and not the salt, in the salt of sulfamic acid would influence the Reduced Chorite Demand Factor.

With regard to Claims 7-9, the acid in the composition of Roozdar and Morelli et al. is present at a concentration of 0.01M to >1M (Roozdar, column 8, line 19). The molecular weight of sulfamic acid is 79.1 g/mol; therefore the concentration of 0.01M to >1M is 0.0791% to >7.91%. A salt of sulfamic acid would have a higher molecular weight and thus have a higher weight percentage for the same concentration. For example, the sodium salt of sulfamic acid has a molecular weight of 119.076; therefore the concentration of 0.01M to >1M is 0.119076% to >11.9076%.

With regard to Claims 10-13, the chlorite is sodium chlorite (Roozdar, column 9, lines 52-53 and line 56).

With regard to Claims 14-16, the chlorite is present at about 0.09 g to about 45 g per liter (Roozdar, column 9, line 56), i.e., about 0.009% to 4.5%.

With regard to Claims 18 and 19, the aqueous acid present in the colorant-containing solution is lactic acid (Morelli et al., Example 1).

With regard to Claims 23-25, the lactic acid in the second part, i.e., the colorant-containing solution, is present at 2.64% (Morelli et al., Example 1). Because the colorant-containing solution is taught to be combined with the chlorite-containing solution at a ratio of 1:1 (Morelli et al., Example 1), the final concentration of the lactic acid after mixing the colorant-containing solution of Morelli et al. with the chlorite-containing total disinfecting solution of Roozdar (i.e., the premix of Roozdar's chlorite-containing and sulfamic-acid-containing solutions) would be 1.32%.

With regard to Claims 26-28, the overall pH range is from >2.0 to about 5.0, preferably from about 2.0 to about 4.5 (Roozdar, column 36, lines 33-35).

With regard to Claim 33, Morelli et al. teach that in a two-part disinfecting system where one part contains the alkaline aqueous chlorite and the second part contains the oxidizable colorant, the two parts are combined in equal volumes (Example 1). It would therefore have been obvious of ordinary skill in the art at the time of invention to use equal volumes of the two parts of the composition of Roozdar and Morelli et al.

With regard to Claim 36, Morelli et al. teach that it is useful to include a wetting agent, textural modifier, film-forming polymer, or surfactant in an aqueous disinfecting system (column 6, lines 56-60). It would have therefore been obvious to one of ordinary skill in the art at the time of invention to include a wetting agent, textural modifier, film-forming polymer, or surfactant in the aqueous disinfecting system of Roozdar and Morelli et al.

With regard to Claim 37, as recited in the rejection of Claim 1 *supra*, the two parts of the composition are combined to form a disinfecting composition; therefore, the disinfecting composition is rendered obvious.

With regard to Claim 49, the salt of sulfamic acid is sulfamic acid (Roozdar, column 3, line 40).

Response to Amendment/Arguments

1. Regarding the rejection of Claims 1-4, 7-16, 18, 19, 23-28, 33, 36, 37, and 49 under 35 U.S.C. 103(a) over Roozdar in view of Morelli, Applicant argues that:

2. (1) The problem solved by Applicants' invention would not be solved by excluding the disproportionation agent.

3. This argument is not persuasive because it is not necessary for the prior art or combination of prior art to have the same motivation as Applicant for producing the composition; as long as the prior art meets the structural limitations of the instant claims, the art reads on the claims, regardless of the motivation or problem solved.

4. (2) The claims now include that the first part is alkaline and the second part is acidic and that both parts are aqueous. The sulfamic acid is present in the alkaline part, whereas the art describes the use of the sulfamic acid as an acid and does not teach or suggest the placement of the sulfamic acid into the alkaline part. The art fails to recognize the benefit of placing the sulfamic acid in the alkaline part.

5. This argument is not persuasive because the claims do not actually recite that the first part is alkaline and the second part is acidic. Claim 1 states “the first part comprises an alkaline aqueous chlorite and a salt of sulfamic acid and the second part comprises an aqueous acid and an oxidizable colorant.” Thus, only the chlorite of the first part is recited to be alkaline and aqueous. Similarly, the second part is only recited to comprise an aqueous acid; this does not require the overall second part to be acidic or aqueous. Therefore an acidic first part and an alkaline second part would still read on the instant claim, as long as the first part contained an alkaline aqueous chlorite and as long as the second part contained an aqueous acid, and it is not necessary for the art to recognize the benefit of placing the sulfamic acid in an alkaline solution.

6. Roozdar describes a disinfecting solution where a basic chlorite solution is combined with an acidic solution containing sulfamic acid. This overall disinfecting solution was used as the first part of the composition of Roozdar and Morelli described in the rejection above. The colorant-containing solution of Morelli is used as the second part of the composition of Roozdar and Morelli.

Thus, the first part of the solution contains an alkaline aqueous chlorite and a salt of sulfamic acid, even though its overall pH is acidic, and the second part of the solution contains an oxidizable colorant with the inclusion of an aqueous acid to maintain the acidic pH of the overall solution after mixing, as described in the rejection above.

7. (3) The art fails to recognize placing acidified chlorite with sulfamic acid in the alkaline part along with an oxidizable colorant and in the absence of a nonoxidizable colorant.

8. This argument is not persuasive because as described above, the instant claim does not recite the placement of acidified chlorite with sulfamic acid in an alkaline solution. The claim recites the placement of an aqueous alkaline chlorite with sulfamic acid in the first part of the composition; as described above, the claim does not require the overall first part of the composition to be alkaline; it only requires the first part of the composition to contain an aqueous alkaline chlorite. An acidified chlorite is not mentioned anywhere in the claims. Thus, Roozdar describes a disinfecting solution where a basic chlorite solution is combined with an acidic solution containing sulfamic acid. This overall disinfecting solution was used as the first part of the composition of Roozdar and Morelli described in the rejection above and meets the limitation of placing the alkaline aqueous chlorite and sulfamic acid together in the same part of the composition.

9. (4) Sulfamic acid is surprisingly stable in an alkaline aqueous solution, which is an advantage that is unrecognized by the art.

10. This argument is not persuasive because as described above, the instant claim does not recite the inclusion of sulfamic acid in an alkaline aqueous solution; it recites the inclusion of sulfamic acid in a solution containing an alkaline aqueous chlorite. As described above, Roozdar teaches the inclusion of sulfamic acid in a solution containing an alkaline aqueous chlorite.

11. (5) The combination of chlorite solution and sulfamic acid aolution followed by letting the mixture sit to allow the chloride dioxide gas to evaporate as described in the office action of 10/14/2011 does not solve the problem achieved by the claimed invention, i.e., it fails to overcome the problem presented by an acidified sodium chlorite system.

12. This argument is not persuasive because as described above, it is not necessary for the prior art or combination of prior art to have the same motivation as Applicant for producing the composition; as long as the prior art meets the structural limitations of the instant claims, the art reads on the claims, regardless of the motivation or problem solved.

13. Regarding the rejection of Claims 1-4, 7-16, 18, 19, 23-28, 33, 36, 37, and 49 under 35 U.S.C. 103(a) over Richter in view of Morelli and Kolar and Lindgren, Applicant argues that:

14. Richter does not actually exclude a nonoxidizable colorant; Example III of Richter includes oxidizable colorants. Neither of these colorants are D&C/FD&C colorants as required by Applicants' claims, and neither are nonoxidizable.

15. This argument is persuasive; Example III of Richter does actually include nonoxidizable colorants as noted by Applicant. However, it should be noted that Applicants' amended claims do not require the colorants to be D&C/FD&C colorants; D&C/FD&C colorants are not recited in the amended claim set.

Conclusion

No claim is allowed.

1. No new grounds for rejection have been presented. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to DEVANG K. THAKOR whose telephone number is (571)270-5972. The examiner can normally be reached on 10am-6:30pm (Monday-Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID BLANCHARD can be reached on (571)272-0827. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DEVANG THAKOR/

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/Joanne Hama/
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